

What is Claimed is:

Sub A1
1. A metallic seal component comprising an alloy which in use exhibits super-elastic properties.

2. A seal component as defined in claim 1 comprising a shape memory alloy.

Sub A2
3. A seal component as defined in claim 2 comprising an energizing mandrel.

4. A seal component as defined in claim 2 comprising a seal backup spring.

10 5. A seal component as defined in claim 1 comprising a sealing element.

6. A seal component as defined in claim 5 in which the sealing element comprises a sealing ring.

Sub A3
15 7. A seal component as defined in claim 5 in which the sealing element comprises a sealing ridge that, in use, makes sealing contact with a co-operating sealing surface.

8. A seal component as defined in claim 5 in which the sealing element has a U-shaped cross-section.

20 9. A seal component as defined in claim 2 in which the shape memory alloy is selected from the group consisting of NiTi, CuZnAl and CuAlNi.

10. A seal component as defined in claim 1 which in use is stressed so as to maintain a sealing contact force with a co-operating sealing surface.

11. A seal component as defined in claim 1 that in use changes its shape or size between an energized, seal enabling state and a released, unsealed state, the change of shape or size being effected by heating or cooling.

12. A seal component as defined in claim 11 which when energized is stressed so as to generate sealing contact forces.

13. A seal component as defined in claim 11 having thermo-mechanical properties such that under ambient conditions in use the component is stressed so as to generate sealing contact forces.

14. A seal component as defined in claim 1 comprising a one-way shape memory alloy.

15. A seal component as defined in claim 1 comprising a two-way shape memory alloy.

16. A seal component as defined in claim 1 comprising a bi-metallic construction.

17. A seal component as defined in claim 16 having a U-shaped cross-section.

18. A seal component as defined in claim 1 having a tubular cross-section.

19. A bi-metallic seal element comprising a shape memory alloy.